Case Study Site

Natural Resources Conservation Service (NRCS)

The Henry's Fork watershed is large, complex, and picturesque. Over 800,000 acres of the upper watershed are in public ownership. Elevations range from 10,240 feet at Targhee Peak to near 4,500 feet at the confluence of the Teton and Henry's Fork Rivers (Figure 1). Precipitation varies from 40 inches in the upper watershed to 10 inches in the case study site. In the lower watershed, most of the precipitation falls in May and June.

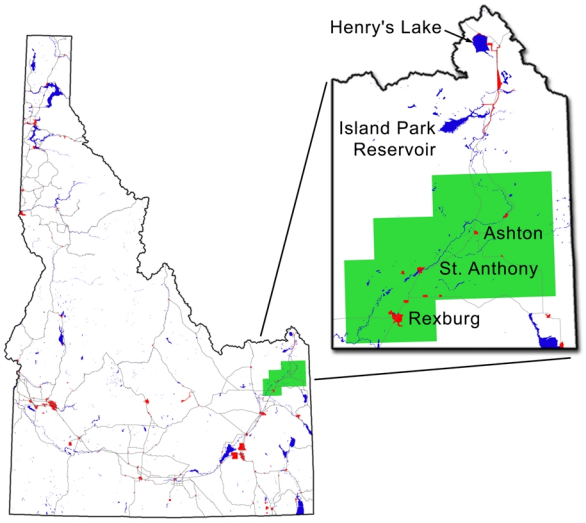

Figure 1 - Location map.

Forest and range land predominate in the upper watershed. Rolling loess hills and basaltic plains define the lower reaches of the watershed supporting row crop agriculture and ranching. This working landscape, the site for the case study, is populated by scattered farms and ranches supported by small, rural communities. Agriculture, ranching, and tourism are mainstays of the regional economy (Figure 2). The case study site corresponds with the area being researched by TRLT and its conservation partners.

Craig Johnson

Figure 2 - The lower Henry's Fork watershed is a working landscape producing cattle, wheat, potatoes, and large rainbow trout.

The case study will focus on the Henry's Fork riparian corridor, located within the landscape context of the lower reaches of the river. This area was selected for more detailed analysis because it is experiencing some of the most intense development pressure in the watershed. The detailed site is two miles wide (approximately one mile from the top of the bank on either side of the Henry's Fork River) and approximately 40 miles in length (Figure 3). In some locations, the study corridor was widened to include habitats or other resources of importance as determined

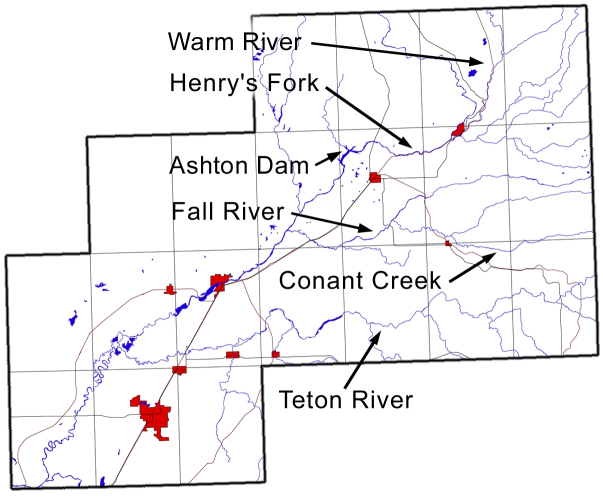

Figure 3 - The lower Henry's Fork and its main tributaries.

by the research team. The study corridor begins at the confluence of the Henry's Fork and Warm River downstream to the confluence with the Teton River. The study will also include the Fall River and Conant Creek--major tributaries of the Henry's Fork.

Craig Johnson

Figure 4 - The Henry's Fork flows through an incised canyon at the northern end of the study site. The inactive point bar has reverted back to shrub-steppe habitat.

There are three distinct segments to the Henry's Fork within the case study corridor. The upper segment extends from the Warm River confluence downstream to Ashton Dam. An incised river basin characterizes this segment--steep side slopes bounded by gently sloping uplands (Figure 4). Soils in this segment (Marytown-Robinlee and Greentimber) are deep, well-drained of loess origin underlaid by glacial deposits. In some locations underlying basalt is exposed. Pre-Anglo settlement upland plant communities were dominated by grasses including wheatgrass (Agropyron sp.), needle grasses (Stipa sp.); and Idaho fescue (Festuca idahoensis); shrubs including sage (Artemisia sp.), service berry (Amelanchier alnifolia), bitterbush (Purshia tridentata), and rabbitbrush, (Chrysothamnus sp.) Along this segment of the Henry's Fork, the riparian zone is narrow with occasional stands of river birch (Betula occidentalis), alder (Alnus incana), willow (Salix sp.), and chokecherry (Prunus virginiana). Sedges (Carex sp), rushes (Juncus sp.), and grasses dominate the banks. Old inactive point bars and deltas are vegetated by xeric shrub-steppe plant communities.

The middle segment runs downstream from Ashton Dam to the water diversion below St. Anthony. In this segment, the river channel is typically less than 10 feet below the adjacent uplands. Several large side drainages intersect the Henry's Fork in this segment (Figure 5). Soils include a segment of those described above and Rexburg-Ririe and Kucera soils, which are deep, well-drained, and formed in loess. Below the Fall River confluence, the soils including St. Anthony- Allewitt and Eginbench, which are deep with drainage varying from well-drained to

Dave Bell

Figure 5 - The middle segment of the Henry's Fork flows through range land and irrigated pasture.

poorly drained. Basalt formations are evident in some locations. Pre-settlement upland vegetation was similar to that described above. The riparian zone remains narrow until just above St. Anthony. Rushes, sedges, and grasses are dominant ground covers with occasional stands of Cottonwood (Populus trichocarpa), box elder (Acer negundo), willow, river hawthorn (Crataegus douglasii), and chokecherry.

The lower segment is characterized by a broad floodplain and sinuous channel alignment. The river channel is braided in many locations with active point bars, bank erosion on the outside bends, and numerous oxbows (Figure 6). Cottonwoods dominate the plant community with occasional large stands of river hawthorn, willow, dogwood (Cornus sericea), and chokecherry. Plant species diversity and community structural diversity is highest in the

Hank Henry

Figure 6 - The Henry's Fork is broad, frequently braided, and has an extensive flood plain as it exits the southern end of the study site.

lower segment. In the first two miles below the St. Anthony diversion, cottonwood stands are in senesance with little recruitment of young cottonwoods. Numerous irrigation canals extend into the agricultural matrix and function as ephemeral riparian corridors (Figure 7). Soils in the lower segment are deep with variable drainage, the same general soils groups that are found downstream of the Fall River confluence.

Jared Barnes

Figure 7 - Canals, roadsides, and other introduced corridors provide wildlife habitat and connectivity in the lower Henry's Fork Watershed.

Henry's Fork flow rates through the 40-mile study corridor are regulated by management of two upstream dams and Ashton Dam (see Figure 1). In addition, several water diversions affect river flow during the growing season. Upland irrigation affects groundwater levels, and return subsurface flows to the river result in occasional seeps and saturated bank soils.

Craig Johnson

The Henry's Fork, its tributaries, and related canal system function as habitats and corridors for migration and dispersal for a variety of wildlife species. In cold shrub-steppe landscapes like the case study site, riparian corridors and wetlands are among the most important habitat types. Over 80% of all vertebrate species use these habitat types at least once during their life cycle. The Henry's Fork corridor may be the key to biodiversity conservation in the lower segment of the watershed.

Craig Johnson